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lium. The basidia resemble somewhat those of *Cylindrodendrum*,³ are less regular in form, while those of *Cylindrodendrum* are subopposite and sometimes whorled, and the conidia are strictly cylindrical.

Olpitrichum carpophilum sp. nov.⁴—Effuse, whitish. Fertile hyphæ hyaline, 3–7-septate, 90–180 \times 4–6 μ . Basidia flask-shaped or fusoid scattered, or grouped irregularly or in the form of rosettes, 10–15 \times 3–6 μ . Conidia ovate or sometimes oblong or broadly elliptical, frequently with a minute apiculus at the base, hyaline, 25–30 \times 16–25 μ , or 16–25 μ in diameter. On decaying carpels of *Gossypium herbaceum*, Brundage, Ala., Sept. 1891.

The characters of *O. carpophilum* are shown in plate XXIII, figures 1 to 4. *Rhinotrichum macrosporum* Farlow and *R. tenellum* B. & C. are also represented in the same plate. The spores of *R. macrosporum* Farl. measure 15–30 \times 10–20 μ , and those of *R. tenellum* B. & C. measure 6–12 \times 10–20 μ . The ends of the fruiting hyphæ or their branches are somewhat enlarged and denticulate or spiculigerous in *R. tenellum*.—GEORGE F. ATKINSON, *Botanical Department, Cornell University*.

EXPLANATION OF PLATE XXIII.—Figs. 1–4, *Olpitrichum carpophilum* Atkinson.—Figs. 5–8, *Rhinotrichum macrosporum* Farlow. Figs. 9–13, *R. tenellum*, B. & C. Figs. 4–7, 9–13 drawn to the same scale; 1–3, 8, and 14 drawn to the same and a higher scale.

Notes on germinating myxomycetous spores.—The paper upon the germination of spores of *Enteridium Rozeanum*, by E. J. Durand, in the March number of the GAZETTE, suggested to me that possibly my own experience was worthy of record.

In the early part of April, 1893, I brought in a specimen of *Reticularia umbrina* Fries. As soon as it was mature, five days later, spores were placed in ordinary drinking water, and in a few hours were found to have germinated. Further experiments showed that some spores germinated within from fifty-five to sixty minutes. Within ninety minutes one-tenth of the spores usually germinated, and few germinated later. The swarm cells remained active several days in the moist chamber. During the past year the spores of this and other specimens of *Reticularia umbrina* have been frequently germinated in my laboratory by different students, no difficulty ever having been experienced. By placing a quantity of the spores in some distilled water in a watch glass, millions of the swarm-cells will appear in an hour or two and form a conspicuous white layer, with the ruptured episporous and ungerminated spores as a substratum.

³Bonorden, Handbook. —Cornu, Reproduction des Ascomycetes, etc., Ann. d. Sci. Nat. Bot. VI. 3: 53. pl. 9. fig. 12.

⁴This fungus appeared in the exhibit of the Agr. Dept. at the World's Fair, Chicago, 1893, among the diseases of cotton from Alabama, under the provisional name *Rhinotrichum macrosterigmatum* Atkinson, which name was never published.

In April of this year I collected a fresh specimen, and germinated spores from it side by side with spores from the specimens then a year old. I found that, as before, about one-tenth of the spores from the fresh specimen germinated, while one-third to one-half of the year-old spores germinated. The swarm-cells from the latter seemed to possess more vitality also, remaining alive in distilled water longer than the swarm-cells from the fresh spores. Very few of the latter were found active at the end of twenty-four hours. There was little difference in the time required for the germination of the two. The temperature was always that at which the air of the laboratory happened to be, no attempt ever having been made to keep the spores at any given temperature.

The diameter of the spores is about 8μ , of the amoeboid cells about 7μ , and of the swarm-cells about 6μ . Only uniciliate swarm-cells were observed.

I have also germinated year-old spores of *Diachaea leucopoda* Bull., *Hemiarcyria rubiformis* Pers., and *Fuligo septica* (Fries) Link., and spores of *Badhamia hyalina* Pers. two months old. Only a small percentage of any of these germinated, but the time required was less than three hours for any of them. Only amoeboid cells of *Hemiarcyria rubiformis* were observed. In all cases about one-half hour was consumed by the protoplasm in escaping from the epispore, and the time given above as the time required for germination is that between the moment they were placed in water and the moment the protoplasm assumed the swarm-cell form.

It will be seen that my experience agrees more closely with that of De Bary¹ than that of Durand. The time required for the germination of some of the spores is shorter, however, than that of which I find any record. I am indebted to A. P. Morgan for the determination of the specimens mentioned in this article.—ALFRED JAMES MCCLATCHIE, *Biological Department, Throop Polytechnic Institute, Pasadena, Calif.*

Sphaeroplea annulina (Roth.) Ag. in Minnesota.—This interesting alga has been previously reported from California by Dr. W. G. Farlow, upon the basis of collections by Mrs. Austin near San Bernardino² and so far as known to me this is the only authentic report of its occurrence in the United States. Wolle,³ whether from a doubt concerning the identification or failure to note the definite terms of Dr. Farlow's announcement, states that "it is reported from Califor-

¹De Bary, *Comp. Morph. and Biol. of Fungi*, etc. (Eng. trans.) 421 and 448. 1887.

²Farlow, W. G., Notes on fresh-water algæ. *Bot. Gaz.* 8: 224. 1883.

³Wolle, *freshwater algæ of the United States*. 104. 1887.